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The temple of Diana at Ephesus

James Fergusson

THE TEMPLE OF DIANA

AT EPHESUS,

WITH ESPECIAL REFERENCE TO MR. WOOD'S DISCOVERIES OF ITS REMAINS.

BY

JAMES FERGUSSON, 1808-86

C.I.E., D.C.L., LL.D., F.R.S., F.R.I.B.A., &c.

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THE TEMPLE OF DIANA AT EPHESUS,

WITH ESPECIAL REFERENCE TO MR. WOOD'S DISCOVERIES OF ITS REMAINS.

IN January 1877, I read a Paper to the Royal Institute of British Architects on the "Temple of Diana at Ephesus, with especial reference to the Hypæthrum of the Greeks," which was printed in its Transactions for 1876-77, pp. 77 *et seqq.* At that time Mr. J. T. Wood had just published his popular account of the results of his excavations at Ephesus, and I, like everybody else, was full of admiration for the wonderful sagacity which had enabled him to discover the long-forgotten site, and the patience and perseverance which had sustained him for eleven long years from the time when he first undertook the search till he had laid bare the very foundations of that celebrated temple. My principal object in bringing forward the subject at that time was not to dispute any of the *data* he had acquired during the excavations, but to add to them certain elucidations which I thought he had overlooked, and to correct what appeared to me an erroneous theory as to the mode in which light was introduced into the cella,—a subject on which I then, as now, entertained strong views, which were not those that Mr. Wood advocated.

In bringing the subject forward, I could not but regret that Mr. Wood had not then published the results of his excavations in any detailed or scientific form, nor indeed has he now, for though nine years have elapsed since they were completed, they are not yet given to the world in any shape that can be relied upon, or utilized for any scientific purpose. In this respect he would have done well to borrow a hint from the practice of our French neighbours. There is, in the École des Beaux-Arts, a beautiful series of drawings of ancient monuments, the result of investigations made by French architects in competing for the prizes offered by the different Academies. In all these drawings the first and most indispensable is a detailed plan, with an elevation of the building as it exists, adding nothing and at the same time omitting nothing that pertains to its original form. After this the architect is allowed to indulge his learning or imagination to any extent he likes; and many of the restorations are wild and fanciful to an extent that is more amusing than instructive. This, however, is of little consequence, as the materials are afforded by which a judgment can be arrived-at, by outsiders, as to their truth or falsehood, and every one can restore the building from the *data* given nearly as well as the original explorer of the remains. Mr. Wood has reversed the process. He has published a restoration, which, to say the least of it, is open to criticism, but he has not published the *data* on which it is founded, nor has he given a separate plan of the results of his excavations. We consequently never knew what he found *in situ*, or what he inferred from the remains which he actually discovered. I was in hopes that in my case this would have been remedied, as he gave me to understand, that he would lend me, for the purpose of my

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lecture, his working-plan of the excavations, on which are marked all the requisite details. But at the last moment it was found to be stowed away among some old papers in an old chest at Hammersmith and was not accessible! He lent me, however, a plan on sufficient scale, which he had prepared for his own lectures. With that I was obliged to be content, but it did not contain all, or nearly all, the desired information.

If, when Mr. Wood returned home in 1874, he had been content to publish a plain narrative of what he had found at Ephesus, accompanied by his working-plan of the remains but without any attempt at restoration, his name would have stood among the first of British archæological explorers. The trustees of the British Museum would no doubt have borne the expense of such a publication, as it was indispensable to explain the marbles, which had already cost them some £16,000; and such a publication would have cost a hardly appreciable portion of that amount. If afterwards he felt that he was better qualified than anyone else to breathe life into the "disjecta membra" of the temple, the public would have listened with pleasure to what the discoverer of the temple had to say on the subject, though it by no means follows, as a general rule, that those most fitted to dig are the best qualified to draw; but there is no reason why the attempt should not be made. But in the present instance, as I fancy it will appear in the sequel, the attempt has not proved successful, if for no other reason, at least this: that the temple at Ephesus, according to his restoration, instead of being the largest and most magnificent temple — the wonder of the ancient world — turns out to be smaller, and in most essential respects an inferior temple to that at Didyme, existing in its immediate neighbourhood.

There is not a shadow of a reason for suspecting that, in thus reversing the ordinary course of proceeding, Mr. Wood intended to mislead anyone, or to slur over any inconvenient fact. It is understood that his only motive in acting in this manner, and his refusing to let even the trustees of the British Museum have a copy of his plan, is that he hopes one day to publish a great book on the temple, and he naturally wishes to reserve his plan and all the more important details for his own folio work. Throughout he has been transparently honest, and all his figured dimensions are accurate to inches, or half inches, as the case may be; but the misfortune is, from the scale on which they are published, those which are not figured can hardly ever be ascertained with accuracy, and from the paucity of details in the text it never can be ascertained whether they were measured or merely inferred. In the plan, for instance, the distances between the bases of the columns and the topmost step is about 15 feet at the sides, at the ends it is about 17 feet or 18 feet; in neither instance is the figure quoted. In the sections it is 17 feet at the sides and 18 feet at the ends, as nearly as can be measured from the scales. But a more important point is: On the plan the distance from the centre of the inner pillars of the pronaos to the centre of the wall of the vestibule is 29 feet at least. In the posticum it is 30 or 31 feet. Neither of these dimensions is admissible, if we remember the story told by Pliny of how the architect despaired of ever being able to raise an epistylium, which we now know was only 28 feet 8½ inches.* I got over the difficulty by bringing forward the wall of the pronaos (which I was perfectly justified in doing by Mr. Wood's *not* finding it), and putting the stairs behind the wall of the posticum. According to Mr. Wood's plan, it could only be remedied by adding two pillars to the pronaos and two to the posticum.

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* Pliny, book XXXVI. ch. 14.

It is true the inner epistylium would then only have been 15 feet instead of 17 feet, which is that of the peristyle, but that would have been better than the impossible one of 30 feet; it would have involved, however, the introduction of four more pillars to the plan, which would have been fatal to the theory of introducing a comma after "centum," and therefore Mr. Wood considered he was justified in rejecting the idea and facing the difficulty by introducing the 30 feet epistylia. In the sections[*] the length is reduced to 27 feet and 28 feet, but this is only another instance of the danger of working on so small a scale. These differences are not perceived either by their author or the student who examines the drawings, but they are frequently of the utmost importance in working-out the details for the restoration of the temple.

These were blemishes of course, and made Mr. Wood's restoration in some respects very unsatisfactory, but there was nothing in them that might not have been put right by better drawings on a larger scale and more pains on his part. But there was one thing came out in these investigations which appeared to me then, as now, quite unaccountable, which no improvement in the drawings could explain away: It was that the temple of Apollo at Didyme, as restored by the Society of Dilettanti,[†] and now excavated by Messrs. Rayet and Thomas,[‡] was a larger and finer temple in every essential respect than that of Ephesus as restored by Mr. Wood. It had 120 columns of the Ionic order nearly 65 feet high, against 100 columns 60 feet in height—Mr. Wood makes them only 55 feet 8¾ inches—at Ephesus. It was the same width as Ephesus, but 13 feet more in length. Against this Ephesus could only adduce its "36 columnæ cælatæ," but the value of even this exceptional adornment was diminished by the richly carved bases of the 10 front columns at Didyme. The pyramid of 14 steps on which Mr. Wood found the Ephesian temple had been raised was also an exceptional feature; as he, however, restored them, they were rather an architectural deformity than an ornament. They hid the bases of the columns—even those that were "cælatæ"—from the courtyard and prevented the pillars in all instances from having a proper base or apparent foundation. No such solecism is to be found in any temple in the ancient world. Notwithstanding all this, no author among the ancients speaks of the Temple of Ephesus without going into raptures about its beauty and magnificence. Philo says: "It is the only house of the gods. "Whoever examines it would believe that the gods had left their immortal regions to come "down and live on earth."[§] Pliny, after lauding the tomb of Porsenna and the hanging garden of Babylon (misprinted Thebes), says: "But though these are wonderful, the temple "of the Ephesian Diana is a work of truly admirable magnificence."[||] Pausanias, in his fourth book, speaks of the magnitude of the Ephesian temple, which surpasses every other structure raised by human hands;[¶] and, in his seventh book, states "that it excelled all others in "magnitude and splendour, while next to it came the temple of Apollo at Branchidæ."[**] Numerous other voices are raised to extol it, and all are agreed that it was worthy to be ranked as one of the seven wonders of the world. But while this is so, there is great difficulty in finding any author (except Pausanias) who mentions the temple at Didyme, and not one who goes into raptures about it, as hundreds do over the Ephesian temple.* In short, it turned out that the temple of Diana at Ephesus, as restored by Mr. Wood, was much smaller and in almost every essential respect an inferior temple to that of Apollo at Branchidæ, in direct contradiction to the testimony of Pausanias and the generally expressed opinion of the whole ancient world.

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[*] There are no numbers to the plans of Mr. Wood's work, and they are not opposite any particular pages, so that there is great difficulty in referring to them correctly.—J. F.

[†] *Antiquities of Iona*, vol. I, ch. 3, plate 3, *et seqq.*

[‡] *Gazette des Beaux-Arts.* July, 1876.

[§] Philo de septem miraculis mundi.

[||] Pliny, XXXIV. 13, 14.

[¶] Pausanias, IV. 31.

[**] Pausanias, VII. 5.

When I wrote my previous Paper on this subject, the only mode that occurred to me of reconciling this universal testimony of the ancients with the very commonplace temple represented in Mr. Wood's work, was to assume that all this glorification was due to the exceptional magnificence of its podium. It seemed easy to understand how a mass of marble masonry, 425 feet in length, 220 feet in breadth, and 10 feet high, if covered with bas-reliefs, on its four faces, and crowned by a crowd of statues in marble and bronze, mingled with architectural ornaments, might easily, in the hands of Greek architects, become an object of surpassing beauty, and worthy of all the praise that was bestowed upon it. The recent discovery of the great altar at Pergamos, the sculptures of which are now the principal ornaments of the Berlin Museum, was sufficient to show how nearly I might have been right in this assumption. At an earlier and a better age this stylobate must indeed have been a thing of beauty, such as even the ancient world could hardly parallel, and now that it can be shown that it was surmounted by a peristyle consisting of a larger number of columns than any known example, and nearly a third of them adorned with sculpture of exceptional beauty, we have no difficulty in understanding the raptures the ancients fell into in speaking of the surpassing beauty and magnificence of this far-famed temple.

All these considerations made out a case against Mr. Wood's plan and proposals that showed them to be unsatisfactory and perplexing in the extreme, but was hardly sufficient to justify anyone in rejecting them as altogether mistaken. The errors in drawing and design might have been remedied by a more careful protraction on a larger scale, and further study of the architectural necessities of the temple. I had not, of course, a moment's hesitation in rejecting his mode of lighting the cella by taking off the roof of it entirely, while carefully covering over the vestibules and porticoes at either end of it. In this it was evident that he was merely following the practice of what is now, it is to be hoped, an extinct school of architects, and did not pretend that he was thinking for himself, or had found anything at Ephesus to justify this mode of restoring the temple. But while he had spent so many years in exploring the remains it would have been a strong measure to reject his plan of it, without at least having something to substitute for it. This I was not prepared to do when I submitted my proposals for the emendation of Mr. Wood's plan to the Institute. When, therefore, I came to that part of my book on the Parthenon in which it was necessary I should say a few words on the mode in which light was introduced into the Ephesian, as one of the four great hypæthral temples of the ancient world, I could only repeat what I had before said, without any essential variation. When, however, I saw in type what I had written, and took down Pliny to verify the references, I felt convinced there must be a great mistake somewhere; and after several attempts to reconcile the ancient with the modern restorers of the fane, it occurred to me that there must have been nine columns in the posticum, with the ordinary epistylia to match the unusually widely-spaced eight in the pronaos. We had then only to assume that there were three rows of columns in the rear and to add one row to the front, to which there was no objection, and all the difficulties with regard to the plan of the temple were solved. There were 127 columns, and it was the greatest and most ornate temple of the ancient world.

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* In my former Paper (TRANSACTIONS, 1876-77, pp. 81 & 89) I gave plans of these two temples, as a means of comparing them, though unfortunately not to the same scale.—J. F.

As the temple at Ephesus formed only an episode in my work on the Parthenon,* and one not bearing directly on the main argument of the work, I did not think it worth while to stop the printing of the work for the sake of this discovery. I thought it would be sufficient to insert a diagram to explain its nature, which was done at p. 34, and reserved myself the right to work it out more in detail on some future occasion. It would have required more thought and more time than I could then afford to bestow on it, to do this properly, but that is what I now propose. I hope, in the present Paper, to explain what the plan of this far-famed temple really was, and the causes which led to its being of such exceptional magnificence.

Notwithstanding the apparent failure on Mr. Wood's part to appreciate the true significance of his own discoveries, his excavations brought to light a mass of authentic facts which alone have sufficed to render the history of the temple intelligible and its restoration possible. Before his time all was mere guess-work, founded on not very intelligible written texts: these have now become clear and certain, and we may proceed to restore its forms and features with certainty and success.

From various historical indications we learn that there existed at Ephesus seven or eight successive temples dedicated to Diana, all of which except the last were destroyed by fire. With the first five of these we have nothing to do at present, no trace of them has been found in the excavations, and it is even uncertain if they stood on the same spot. From the anecdote told by Herodotus † of the Ephesians joining the city to the temple by a string or tape (?) seven stadia in length when attacked by Crœsus, I would fancy the original temples stood on the rocky summit of Aiasluk, at the distance of seven stadia from the city, but being subject to earthquakes in that situation, the temple was afterwards moved down to the alluvial plain. The last three were certainly situated on the same spot, and built, as Mr. Wood found them, one over the other, and approximately at least on the same plan. It is consequently with these three that we are now concerned, and to them and them only the following remarks will be confined.

So essentially were the three considered as one temple, that it is almost certain that to them the remark of Pliny applies, that "it was erected at the expense of all Asia in the "period of two hundred and twenty years." ‡ If we knew exactly when this period commenced, the history of the three temples with which we are now concerned would be easy. Generally it is supposed from the names of the architects that it was about 600 B.C., but the assertion of Herodotus § cannot be overlooked where he says that "several of the pillars were presented by "Crœsus"; and as this could only apply to a new temple, then undertaken, it seems to indicate it was during his lifetime that it was commenced. It must consequently have been before 546 B.C., when he was conquered by Cyrus. If we assume 550 B.C. as the date of its commencement, it takes us down to 330 B.C. as the date of the completion of the last—three years after Alexander's visit, and twenty-six years after the penultimate temple was burnt by Herostratus. Another circumstance that renders the date probable is that Pliny when speaking of the durability of the timber of its roof says that it had lasted 400 years.* As his book was probably written about the year 70 A.D.—he died in 79—this would take us back to exactly 330 B.C. for the roof—the last part—being put on the temple. Of course it may be asserted that Pliny is speaking in round numbers, and this may not be the exact date, but with so accurate an author as Pliny is generally found to be, when properly interpreted, it may safely be inferred that he considered the date of the completion of the last temple was not far from that date. The one question is, is twenty-six years sufficient for the erection of such a temple as we know this to have been? It does not appear that a longer interval was required. The Parthenon, according to the longest calculation,† was erected in sixteen years by the smaller and less wealthy community of Athens, and generally it is supposed it was finished in eight years. Our St. Paul's Cathedral, which is a far larger and more complicated building, was erected in thirty-five years; and altogether I see no improbability in the Ephesian temple being restored in twenty-six years. It must have been tolerably near completion when the Ephesians rejected Alexander's offer to repay the cost, and they must have felt confidence in their being able to complete it.

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* *The Parthenon; an Essay on the mode by which light was introduced into Greek and Roman Temples*, pp. 32-38. 4o. Lond. 1883.

† Herodotus, I. 26.

‡ Pliny, XXXVI. 14.

§ Herodotus, I. 92.

Whether this is the exact date of the beginning of the first and the finishing of the last of these three temples, their history is otherwise tolerably well known. The first was begun by Chersiphron, aided by his son Metagenes, either in the year 550 B.C. or shortly afterwards. It was destroyed by fire about the year 400 B.C., in the same year, according to Eusebius, that Socrates drank poison.‡ It was rebuilt and restored by Païonius, the same architect who built its rival and almost duplicate at Didyme. This temple was the one that was burnt by Herostratus in the same year that Alexander was born, and is the temple to which all that is said by Pliny, and all that was found by Mr. Wood, exclusively applies. The third temple we are told by Strabo§ was built by an architect indifferently called Cheiromocrates or Deinocrates, who was largely patronized by Alexander the Great, and laid out the City of Alexandria under his direction. We are told also that he proposed to cut Mount Athos into a likeness of his patron, and it is probably to him that the temple at Ephesus owes some at least of the novelties which made it afterwards so famous.

Being so similar to one another, the first suggestion that occurs to any one is that they were not destroyed, but merely damaged by these successive fires, and afterwards easily restored. It seems it must have been a difficult operation to set fire to a Greek peristylar temple, for though the central roof was of wood and of considerable extent, the lacunaria of the peristyles, even if of wood, were so small in extent that even if they took fire from the conflagration of the central roof their burning would hardly be sufficient to affect the pillars that supported them. All, therefore, one would naturally suppose would be required after each of these fires would be a thorough repair of the existing building. One, however, of the most curious, and for the history of the temple most important, of Mr. Wood's discoveries disposes at once of this suggestion. He found that the original temple of Chersiphron was raised only 2 feet above the level of the court yard, on a podium of three steps each 8 inches in height. Of the intermediate temple built by Païonius, Mr. Wood says, "Nearly 4 feet above the "lowest of these three pavements (that of Chersiphron) was found the highly-polished white "marble pavement of the last temple but one (that burnt by Herostratus). Large patches "remained in position, and were only discovered on the removal of the foundation piers of the "church."[*] The platform on which the pillars of the third and last temple stood was raised 3 feet 6 inches above this, and so stood 9 feet 5½ inches above the pavement of the court outside, and 7 feet 5 inches above the platform of those of the first temple. These relative heights are shown in the section A. B. [See Illustn. at end.]

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* Hist. Nat. XVI. 40.

† A. Michaelis, Parthenon, p. 9.

‡ Eusebius, Pamph. Chron. Can. I. 134.

§ Strabo XIV. p. 641.

It is evident that, even if used again, the pillars must have been taken down and rebuilt on a higher level each time, for we know of no process by which a pillar 6 feet in diameter and 60 feet in height could be elevated 3 or 4 feet above where it stood before. However unlikely therefore it may appear, we must assume that at each burning the temple was so damaged by fire that it practically had to be rebuilt, and that what we now find there is in reality the temple of Deinocrates and that only.

Whether the arrangement of the columns was the same in the three temples is not known; probably it was, and that the number was 118. The third row in the posticum was almost certainly added afterwards, but the podium in the three was certainly different, and if I am not mistaken, this, which Pliny calls the "universum templum," and was its greatest beauty, was absent from the earlier two. The first because it was raised only three steps or 2 feet could have no such ornamental base. The second was only raised six steps or 4 feet higher, which scarcely admitted of much architectural adornment; but the third, with a podium of nearly 10 feet, could be ornamented to almost any extent, and so far as I can see formed the most characteristic and the great distinguishing feature of this far-famed temple.

As nearly all that was known about the temple was contained in a short paragraph in the thirty-sixth book of Pliny's *Natural History*, it may be as well to quote it entirely, as every word is of importance. After speaking of the tomb of Porsenna and the hanging gardens of Thebes (Babylon ?), he continues, "But the temple of the Ephesian Diana is a work of truly "admirable magnificence, which was raised at the joint expense of all Asia, and occupied two "hundred and twenty years in building. It was placed on a marsh, in order that it should not "be endangered by earthquakes or cleavings of the ground. Besides, that the foundation of "such a pile might not be laid on a sliding or unsuitable foundation, they laid a bed of "charcoal, over which they placed fleeces of wool. The total length of the temple is 425 feet, "its width 220 feet. (It has) one hundred and twenty-seven columns, each the gift of a king, "and 60 feet in height. Of these thirty-six are ornamented by carving, one of which is by "Scopas. Chersiphron was the architect who directed the works."[†]

The above account has every appearance of exactness and authenticity, even though, as it is not the habit in classical books to quote authorities, we are at a loss to ascertain whence the information was derived which it contains. It is not supposed that Pliny ever visited Ephesus, or saw its temple, and the details of his account are too minute to be derived from mere hearsay. We learn from Vitruvius that Chersiphron, with his son Metagenes, wrote a description of the building they had been employed to superintend,* but it could hardly be from that work that Pliny was quoting, as it described necessarily the first of the three temples erected on this spot, and there are many reasons for supposing that the third, which existed in Pliny's time, differed in some essential respects from that of Chersiphron. It is more probable that he was quoting from the book of Democritus, an Ephesian, who, we learn from Diogenes Laertius † and Athenæus,‡ wrote a book about the temple at Ephesus, but which is now lost, except one paragraph about the luxury of its priests, but of no use for the description of the temple. It is probable, however, that it may have contained the information Pliny retailed. Democritus certainly lived at Ephesus, and at a time when the temple was in its greatest state of completeness.

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[*] See *Discoveries at Ephesus*, page 262.

[†] Magnificenciæ vero admiratio exstat templum Ephesiæ Dianæ ducentis viginti annis factum a tota Asiæ. In solo id Palustri facere ne terræ motus sentiret aut hiatus timeret. Rurus ne in lubrico atque instabili fundamenta tantæ molis locarentur, calcatis ea substravere carbonibus dein velleribus lanæ. Universo templo longitudo est CCCCXXV pedum latitudo ducentorum viginti, columnæ centum viginti septem a singulis regibus

The most important statement in the above description for the restoration of the temple, from whatever source it was derived, is the number of the columns, namely 127, which has hitherto proved a stumbling block to all commentators. Some have been puzzled by the odd number of the columns, which they assert is impossible in a regular Greek temple, and consequently propose to add or substract a I from CXXVII, but as the number is expressed in words no correction of the text in this manner is possible. Others consider the number greater than could be employed. At Athens and Didyme the number was only 120, and it is difficult to see how a greater number could be arranged round any cella. Mr. Falkener consequently proposed to insert a comma after 120, making that the number employed, of which consequently it followed that seven only were given by different kings.§ Mr. Wood went further than this, and inserted a comma after 100, making twenty-seven the gift of the kings, which, if the text must be tampered-with, seems on the whole the more probable division.|| But as no commas are used in Latin books, all scholars are agreed that this mode of dividing a sentence into two parts is quite inadmissible. The solution of the difficulty lies I am convinced in a study of his own plan, coupled with a paragraph with which Pliny concludes his description. "The frontispiece in particular offered enormous difficulties, in "consequence of the immense size (of the epistylium). This mass, the heaviest of all, could "not be settled evenly on its bed, and the artist in despair (of effecting this) determined on "suicide. A prey to these thoughts he fell asleep through fatigue, when the goddess for "whom the building was being erected appeared to him in a dream and encouraged him "to live, and saying that she herself had placed the stone. The following day it was found "that the stone had sunk into its proper place by its own weight."¶

This could not apply to the lintel of the great doorway, which a literal translation of the text might lead some to infer, as Mr. Wood found "near the west wall of the cella two large "marble blocks resting on a massive and solid foundation, in which was cut the groove for the "outer bronze wheel, on which the door of the temple moved. . . . The mortice for the door

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factæ LX pedum altitudine, ex iis XXXVI cælatæ una a Scopa. Operi præfuit Chersiphron Architectus.—*Hist. Nat.* XXXVI. chap. 14.—J. F.

* Vitruvius, Præf. VII.

† Diogenes Laert. IX. 49.

‡ Athenæus, XII. p. 525.

§ Falkener's *Ephesus*, p. 241.

|| Wood's *Discoveries*, p. 265.

¶ Pliny, *loc. cit.*

"frame was also cut in one of these stones. The exact width of the whole door was thus "ascertained to be 14 feet 8½ inches, in two parts, as folding doors."* This it is true was of the middle temple, that of Païonius, but as it is exactly the proportion that would suit a temple of the given dimensions, there is no reason for supposing that the doorway of the first and third differed from it to an extent of about a foot, more or less, and if so a lintel of 16 feet or 17 feet would have been no difficulty in a temple where the shortest epistylium † was more than 17 feet, and it would be infinitely more difficult to place these on pillars 60 feet in height, than to place such a lintel on a solid wall, at a height not exceeding 35 feet or 36 feet.

A very cursory study, however, of Mr. Wood's plan is sufficient to make the crux apparent. According to it the central epistylium was 28 feet 8½ inches, the next 23 feet 6 inches; the third 20 feet 4½ inches, and the outside one 19 feet 4 inches. He has not yet explained how he arrived at such minute exactness, but it is easy to see that the position of the antæ and the dipteral ranges of the peristyle must have involved some such graduated spacing, and he is so exact a surveyor that there seems no reason for doubting its entire correctness.

A similar arrangement occurs at Sardis in the temple of Cybele, where the central epistylium is 25 feet 4½ inches, the next 21 feet 7½ inches, and the third 17 feet 8½ inches; the whole width being however only 143 feet 4 inches ‡ as compared with the 163 feet 9 inches at Ephesus, where the wide spacing was carried to an extent that became a *tour de force*, which may well have called for the intervention of the goddess.

If the portico at the west front of the temple had consisted of a single row of columns only, or even if it had been dipteral, this wide spacing of the pillars would have been such a mistake in design, and productive of such feebleness and disproportion, that we cannot conceive any architect of the great age perpetrating such a solecism in design. As drawn in geometric elevation, as for instance in Mr. Wood's plate of this front, it is worse and more inartistic than any design ever executed anywhere by the Greeks. By drawing the pillars to their real height of 60 Greek feet, instead of 55 which he adopts, the proportion is improved, but this is only a slight palliation, the radical defect remains. The truth is, such a portico as that at Ephesus is never in reality seen, as drawn in simple elevation; even when looked-at exactly in front, the columns immediately in rear come into view, and when seen from ever so little on either side, the rear columns support those in front to such an extent, that the transverse epistylium loses almost all its importance. In that position the attention is fixed on the epistylia of the range of five columns, of which that in front is only the termination, and it is supported by their epistylia, in its rear, which in effect become more important to the design than those connecting the columns of the front. The consequences of this disposition of the pillars is, that, when seen at even the slightest angle from the front the resulting effect is that of more closely-spaced columns in the pronaos than exist in the peristyles; and all appearance of weakness arising from the great length of the epistylia in front is entirely obviated.

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* Wood's *Discoveries*, p. 263.

† Throughout this Paper *epistylium* is used as expressing the distance between two columns as measured from centre to centre, that being the length of the architrave that joins them. "Intercolumniation," which is too frequently employed for this purpose, only expresses the distance between the shafts at their lower diameter.—J. F.

‡ Cockerell in Leake's *Tour in Asia Minor*—Appendix.

If I am correct in my assumption, that the twelve central pillars of the pronaos were adorned with sculpture in two tiers in height, it at once becomes evident why this wide spacing became an essential necessity of the design. It was of vital importance that the five columns on either hand should be separated by as wide an avenue as possible, in order that they should be properly seen by the spectators, as well as that they should produce their proper architectural effect. The wing walls of the pronaos, probably, were also highly ornamented, possibly in sculpture, though more probably by painting, but in order that they might be properly seen as well as the reverse side of the central ranges of columns, it was in the highest degree desirable that the greatest possible unencumbered space should be made available in the pronaos, and as arches were not admissible in front, this could only be effected by lengthening the front epistylia to the greatest extent they could bear with safety.

The treatment of the pronaos at Didyme is in curious contrast with this.* The temple is of exactly the same dimension in front, 163 feet, and there are the same five columns in depth in the pronaos; but there the architect adopted the decastyle arrangement for the front, and put twenty columns into the pronaos, where there were only ten at Ephesus; but as none of the columns at Didyme were sculptured above their bases, he adopted the same spacing for them as for all the 120 columns of the temple. It would, indeed, be difficult to obtain a more convincing proof of the correctness of the views I am advocating than this different treatment in the plans of two sister temples: in one of which the pillars had no sculpture above their bases, and in the other nearly one-third were so adorned. By the treatment he adopted, Païonius may have produced at Didyme what was mechanically a finer building, but wanting in all the poetry and artistic effect of the Ephesian temple.

Whether the pillars of the pronaos at Sardis are sculptured or not, cannot be ascertained till some one digs down to their bases which are at present hidden by an accumulation of rubbish. Analogy derived from the experience gained at Ephesus and Didyme would certainly lead to the conclusion that they were more ornamental than is usual.

Although, therefore, the Ephesians adopted this wide spacing with all its inherent difficulties for the front of their temple, it by no means followed that they were to repeat it in the rear, for there is perhaps no temple anywhere which has so markedly a front and a back. The front towards the west face looks to the city and the port; the back, or east front, is looked down upon and partially hidden by the hill on which the modern village of Aisaluk stands, and could not be seen from any public place or road. The temple stood on the very edge of the alluvial plain ("loco palustri"). From the portico behind it, the hill rose with a slope of about 1 in 12 till it reached an elevation of between 60 and 70 feet at about 800 or 900 feet from the temple steps.† It seemed, therefore, the most natural thing in the world to treat this as the back of the temple, not requiring the same elaborate treatment as the front facing the city, and by introducing another column in the centre, to get over the whole difficulty. To adopt the decastyle arrangement there would have been too violent a contrast with the octastyle of the front. By adopting nine columns they could use the 19 feet 4 inches epistylia, which was evidently the one they most admired, as it is found at all the four angles, where in dignity it surpasses the

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* See a plan of the temple at Didyme in the TRANSACTIONS, 1876-77, page 89.

† This fact is derived from a section of the hill obligingly made for me by Mr. Wood.—J. F.

17 feet 1½ inches of the flanks. Thus eight epistylia at 19 feet 4 inches are equal to 154 feet 8 inches, add the thickness of one base, 8 feet 8 inches, and we have 163 feet 4 inches, which is within an inch or so of what Mr. Wood found appropriated to the eight at the other end. It is true ten pillars at 17 feet 1½ inches would have occupied exactly the same space, and all that can be said is, that they did not, for some good reason, adopt it, but preferred the central column and uneven number.

The introduction of a central pillar is by no means an unusual feature in Greek architecture. There is an enneastyle temple at Pœstum, and the great temple at Agrigentum has seven pillars on each face. Wherever the ridge of the roof was supported by a range of internal columns, as was, for instance, the case with the so-called Incantada at Salonica,* a central pillar externally was almost indispensable, and in this instance where there was no central entrance to the posticum, but two entrances, as at Aizani and Agrigentum, the introduction of a central pillar seems to have been the most appropriate mode of treating this façade. At all events, as will appear from the sequel, it was the mode that was adopted by those who must have been better judges of the effect than we can pretend to be.

Another peculiarity of the temple, which is almost as remarkable as the wide spacing of the front, is the adoption of three rows of columns in the posticum, which is not found in any other temple we are acquainted-with. That there were three is certain, as without them it seems impossible to make up the tale of 127; but with that assumption we may leave them at present, as we shall be better able to explain their presence when we have determined the other features of the plan.

What Mr. Wood really found at Ephesus, and what he was enabled to fix with certainty, was, in the first place, the width of the cella. The foundations of its walls existed in some places, and in others there were marks on the piers which had been prepared for the Christian church, which left no doubt on the point. Its width was 69 feet 7½ inches (70 Greek feet, above the floor ?). He found also two transverse walls, one about 120 feet from the antæ of the pronaos, and the other at a distance from it of about 152 feet (150 Greek feet ?) at the eastern end; but though the piers of the church were carefully examined on both sides, no trace of an intermediate transverse wall was found. He also found one pillar of the inner peristyle on the northern side, and one of the outer range on the southern side, absolutely *in situ;* and, as before mentioned, one of the western antæ. These are marked on his plan, a reduction of which is given on the next page. But the most important discovery he made for the restoration of the temple, though it is not marked on any plan he has published, was that he found, on the north side, about 100 feet of the lowest step of the podium—or pyramid on which the temple was raised—in broken fragments it is true, but undoubtedly *in situ,* at a distance which proved the whole width to have been 239 feet 4½ inches; and one fragment of about 6 feet in length, at about 110 feet from the eastern cella wall, of which more hereafter.

With these elements, which he seems to have ascertained with admirable precision, he was able to construct without any hesitation the plan of a temple which had, at least, 100 columns, and was raised on a podium of 14 steps, measuring about 8 inches each in height, or 9 feet 5½ inches altogether above the level of the external pavement.

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* Stuart's *Athens*, vol. III, ch. IX, p. 53.

So far as these facts justify it, there is not a word to say against Mr. Wood's plan; but the mistake running through all he has done and written lies in the assumption that what he found was sufficient for the restoration of the temple. If, consequently, he looked into Pliny and the other authors who had written on the subject, it was only to discover that they were all wrong wherever they differed from him. It never seems to have occurred to him that those who wrote about it, when the temple was standing and perfect, must have been in a better position to describe it, than he was who found only the few "disjecta membra" which time and the barbarians have spared to the present day. Had he only bestowed half the pains to the study of the ancient writers which he devoted in digging-up the remains of the temple, he would not have fallen into the mistake, for when properly investigated there seems no difficulty in reconciling the ancient accounts, in all essential respects, with the modern discoveries, the result being a temple far more worthy of its ancient reputation than that of which he has published a plan in his *Discoveries at Ephesus.**

One of the most distinct assertions in Pliny is that "the temple was 220 feet in breadth." As this is written in words "ducentorum viginti," there can be no mistake, as is so often assumed when any measurement is only in figures. It must also, however, be assumed that Greek feet are meant. All the original authors who wrote about the temple were Greeks and wrote in that language, and the inference is that when Pliny copied their statements, he did not turn them into Roman feet—he probably hardly knew the distinction—and in all instances, especially in reference to this temple, we must be careful to turn the dimensions which Mr. Wood always expresses in English feet, into the corresponding value in Greek feet, estimated at 100 Greek feet equal to 101.35 feet English.

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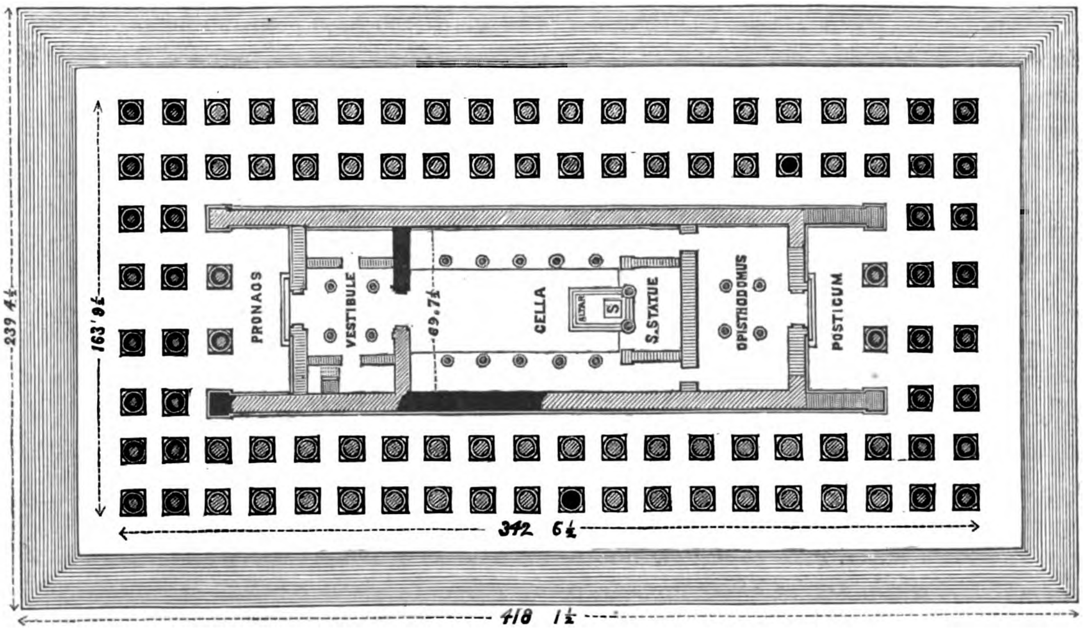
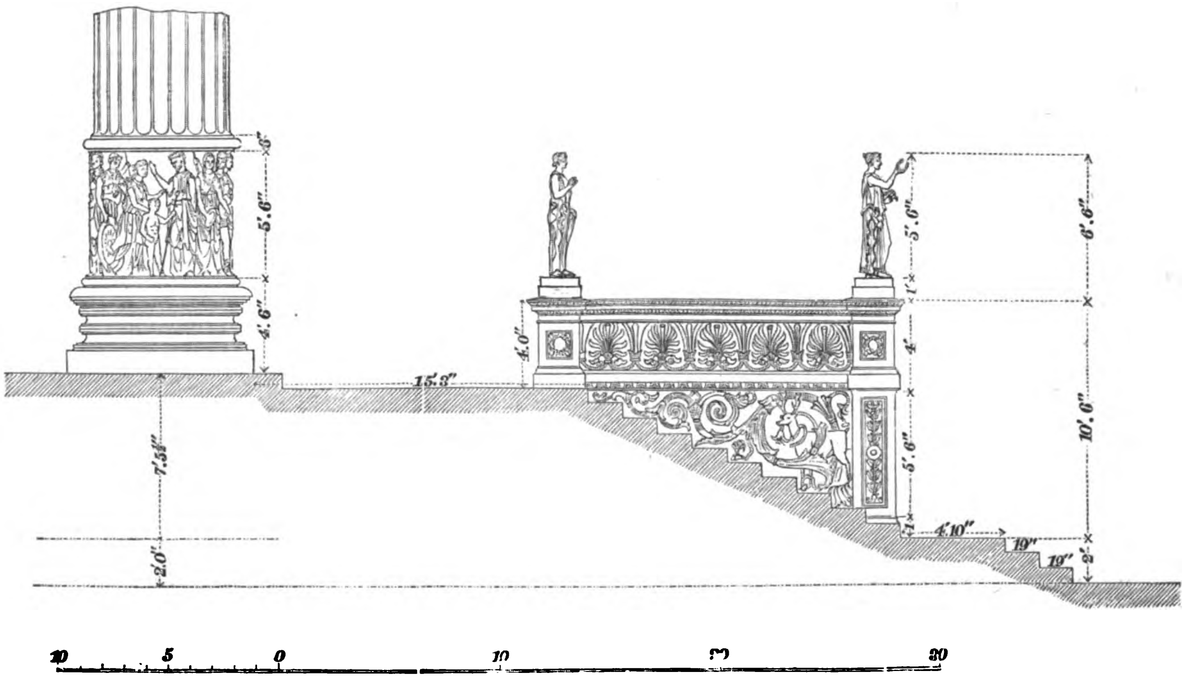
* The plan of the temple at Ephesus as restored by Mr. Wood is here given with his permission. It has been reduced from the illustration at p. 262 of his *Discoveries*. The two columns and the walling and anta coloured black were found in position. The columnæ celatæ are distinguished by a dark line inside.



This measurement was therefore (disregarding inches) 223 feet English, as shown in the Illustration, which neither accords with the width of the peristyle, which is the ordinary modulus for a classical temple, as that was ascertained to be 163 feet 9 inches, nor does it fit the lowest step of the podium, as that measures 239 feet 4 inches, and must therefore apply to what Pliny calls the "universum templum," which, it is easy to see, could not be made many inches more or less, and may have been—probably was—exactly 220 Greek feet in width.

If the "universum templum" was represented by a perpendicular wall of 5 feet 6 inches in height—as shown in the section through the outer portion of the podium—it could not have been built on one of Mr. Wood's plain steps; there must have been an offset or berm in front of it, as shown in the woodcut. It almost certainly was raised three steps, or to the level of the original temple of Chersiphron, and consequently allowing two of these steps to measure 19 inches each, there remain 4 feet 10 inches or 5 feet for the upper step or berm, and the stylobate remains exactly 223 English feet. Adding 16 feet, or 8 feet on each side, it gives Mr. Wood's measurement of 239 feet English for the distance between the two lower steps the position of which he ascertained.



SECTION THROUGH THE OUTER PORTION OF THE PODIUM AS RESTORED BY MR. FERGUSSON.

There was nothing found, at least nothing is mentioned in Mr. Wood's book, to show whether this measurement applied to the original temple of Chersiphron; most probably it did not. The peristyle of the original temple was most probably approached by three steps in immediate proximity with the pillars, and consequently measuring 170 feet in extent. The 50-feet extension was probably due to Deinocrates, to whom we consequently owe the ornamental stylobate, which could not have existed in that of Chersiphron. It is, however, a curious illustration of how the design of the three temples was connected, that the foundation of the "universum templum" should only be an extension of the low podium of the first.

If the transverse dimension of 220 feet was found to apply only to the "universum templum," and to fit it so exactly, the longitudinal measurement of 425 feet ought to be applicable in the same manner and with the same exactness to the other dimensions. On the assumption that there were 127 columns in the temple it does so with admirable precision: thus—

	Feet.	Inches.
19 epistylia on the flanks, at 17 feet 1½ inches - -	325	4
4 epistylia at the angles, at 19 feet 4 inches - -	77	4
2 half diameter of angle pillars - - - -	8	8
11 steps in front, at 19 inches - - - - - -	17	5
English feet - - -	428	9

which is, as nearly as may be, equal to 425 Greek feet. It does not appear that these dimensions admit of any alteration to any appreciable extent, if Mr. Wood's determination of the length of the epistylia, which he seems to have ascertained with remarkable precision, is correct.

It is evident, as already mentioned, from its situation, there was no temple in the ancient world which could with more propriety be treated as possessing a back as distinguished from its front. In the rear, a range of columns similarly spaced with those on the flanks—as at Didyme and Athens—was all that was required, or indeed could be introduced, with architectural propriety. Originally, however, the posticum appears to have been approached by a flight of steps, similar to those of the pronaos, but when it was determined, from some cause or other, to obliterate these externally, by the introduction of the third range, a difference was introduced between the front and rear, which is not usual in Greek temples.

To those who are familiar only with the regular form of peristylar temple raised on an equal stylobate of three steps all round, it may appear anomalous that there should be a *perron* extending 17 feet in front of the pronaos, and that the basement is cut off steep at the posticum. But to those who are intimate with the principles of design that characterized the temples of the East such an arrangement must appear most appropriate and probable. In all the temples we know of in Assyria and Babylonia, the slope of the front is very gradual and adorned with flights of stairs. In the rear it is steeper and unapproachable. The temples at Borsippa and Mugheyr * are so constructed, and nothing would be more in accordance with eastern taste, than that such a feature should be introduced into this temple. The only thing that seems to militate against the idea that this feature was borrowed from the East is that it was not found—was not indeed possible—in the original temple, and was only introduced in that which was erected, and was altered, by the architect of Alexander the Great. As it happens, however, that architect was employed by him to design the city of Alexandria.† From his patron's long residence in Babylon, he must also have been familiar with the temples there, and was consequently most likely to have introduced this eastern feature into Ephesus. So far is its existence from being an objection, it is one of the many proofs of the correctness of the proposed restoration that it should have assimilated a local feature, not found in the other temples of the Greeks.

It must also be remembered that this is the only important temple we know of in the ancient world that was raised on a stylobate, 10 feet in height, and its podium consequently required a different treatment from any other. That it was raised on a pyramid of plain steps as Mr. Wood represents it, appears to me, architecturally impossible. There may originally have been a flight of steps similar to that in front leading to the posticum, but their obliteration by the third range of columns must have appeared to those familiar with this oriental feature a great improvement in the appearance of the temple.

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* *History of Architecture*, vol. I, p. 152, woodcuts 46 to 49.

† Strabo, lib. xiv. p. 641.

Assuming this to be so, we are now in a position to explain the one remaining puzzle, connected with the peristyle of this temple. There is a passage in Strabo in which it is said "Chersiphron originally built it, but afterwards another enlarged it."* This has generally been considered as a mistake or mistaken insertion, for how, it has been asked, when a classical temple is once finished, can it be enlarged? The obvious answer is, only by adding another range of columns at either end. In most temples this of course would be inadmissible, but not in all, and certainly not in this instance. It seems almost certain that, as originally planned by Chersiphron, the temple was dipteral, both in the flanks and in the rear, like the temples of Jupiter Olympius at Athens, and that at Didyme, erected by Païonius. That this was so in this case, is proved almost beyond question by Mr. Wood's discovery of about 6 feet of the first step of the original temple, exactly where we would expect to find it, 8 feet in front of the "universum templum," which at this end continued to be bounded by the second row of columns till the third range was added [see Illustration]. As this was erected over the stairs that led to the opisthodomus, at this end, practically on them, it was not necessary or expedient to remove this mass of masonry, and if the temple had not now been so utterly ruined, the wonder is, that no more of this buried foundation has been found. But it is satisfactory to have found so much, as without it the mode in which the addition was effected might still have remained a mystery.

It is perhaps in vain now to speculate on the causes that may have led the Ephesians to introduce so unusual a feature as a triple row of columns in the posticum of their temple; but it may be suggested, that as they were in the habit of boasting that their temple was the largest and finest in the world, they felt hurt that, while the temple of Jupiter Olympius at Athens had 120 columns, and the neighbouring one at Didyme had the same number, theirs had only 118! which, owing to the octastyle arrangement of the front, was all it had as originally designed. It may also have been that, as erected by Deinocrates, only the three central columns of the posticum were "cælatæ," and it was afterwards thought it would be a great improvement to add a row of nine more, so as to bring up the number in the posticum to twelve, more exactly to balance the twenty-four of the pronaos. There may, however, be many other causes that led to its adoption which we cannot now be expected to appreciate, but whatever they were, it seems certain that this third row was added after the original temple was complete, and formed a unique feature in the design.

In order to make up the required number we have only to add another range of eight columns to the pronaos, and there is nothing in Mr. Wood's discoveries which would interfere with such an arrangement, while it would add immensely to the dignity and architectural propriety of the plan. It would enable the architect also to introduce five ranges of columns in the pronaos, as Païonius afterwards did so successfully in the sister temple at Didyme, where it must have formed, as it certainly did here, the most dignified and appropriate feature of the whole design. Another range of columns in front seems also indispensable to carry-out fully what seems to have been the leading idea of the whole design, which was, that the temple should have a front towards the city which should surpass in magnificence the back resting on the hill.

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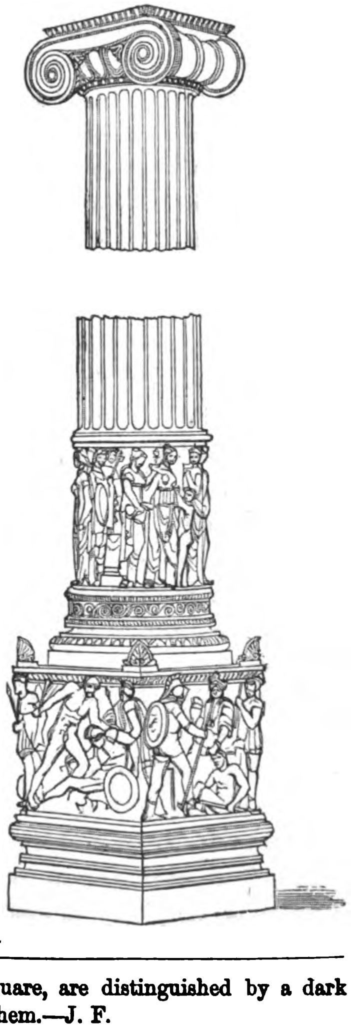
* Χερσιφρων ηρχιτεκτόνησεν εἶτ' ἄλλος ἐποίησεμείζω, lib. XIV., page 640.

One of the most brilliant of Mr. Wood's discoveries was that of several of the drums of the columnæ cælatæ, with thirty-six of which, according to Pliny, the temple was adorned. Hitherto there has been nothing to guide us in trying to ascertain how these were distributed, but, by adopting the 127-column scheme, their position seems hardly doubtful. To maintain that subordination between the back and front of the temple which pervaded the whole design, the number of those in the rear seems to have been half of those in the front, and there seems only one way in which the twelve at the back could be artistically arranged—nine being in the front row and three in the second. At the west end of the temple the arrangement seems equally inevitable. The two front rows must, it seems, have been so adorned, and the six in the centre of the pronaos, and the two in front of the antæ.* If this were so there is no part of the design in which the architect has shown more skill than the mode in which he has sought to give, and succeeded in giving, prominence and dignity to the principal entrance of the temple, and his disposition of the columns, enriched by sculpture in this manner, is one of the most pleasing parts of the whole design.



During the course of his excavations Mr. Wood found one sculptured drum, now in the British Museum, which was less in diameter than the other four which he found; they measured 6 feet ½ inch, this one only 5 feet 6½ inches (*Discoveries*, p. 266). From this he inferred—most probably correctly enough—that, allowing for the entasis of the column, it must have been placed nearly one third of the whole height of the column from its base. As it was found at the east end, he restored all the sculptured columns at that end, with three sculptured drums placed one over the other, an arrangement so thoroughly inartistic that I would have preferred to insert it alone, at the required height, like the rustication of the Italian Renaissance architects. As the temple was looked down upon from the hill behind it, at this end, and the disposition of the stairs was different, and it was essentially the back of the temple, there might have been some excuse for this treatment of the columnæ cælatæ. I believe, however, that a better solution of the difficulty will be found in assuming that the square blocks, which Mr. Wood assumed to have been parts of the frieze of the temple, were really fragments of square pedestals on which some at least of the pillars were raised. If they were portions of the frieze, it is a most remarkable fact that he should have found and sent home the four angle-blocks of the temple, and not one stone of the intermediate parts, for all those in the British Museum are sculptured on the two contiguous faces. It is a still more curious coincidence that two of them still show the marks of a circular drum of the column having at one time been placed on them. Mr. Wood explains this by assuming that they belonged to one of the former temples, and were used in the last for a different purpose from that for which they were employed in the former one. It seems, however, almost impossible to understand what blocks in any previous temple should be so square, and solid enough to receive the marks of the frustum of a column on its summit, unless it had originally been intended as a pedestal for a pillar. There is, it must be confessed, some little difficulty in joining the pillars to the bases now found, and in the British Museum; some intermediate member seems to be wanting, but further study, when all the data are available, may supply this. In the meantime it is a trifling difficulty compared with those inherent in any other hypothesis that has yet been suggested.

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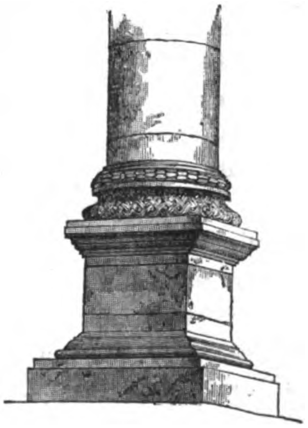
* In the Illustration at end the columnæ cælatæ, both circular and square, are distinguished by a dark line inside. The woodcut on this page is a proposed restoration of one of them.—J. F.

If Mr. Wood would let us know where these fragments, which he supposes were portions of the frieze, were found, we should be in a better position to judge of the correctness of the adscription. So far as I can gather from his popular account, but it is difficult to be certain, for there is no index, they were found in positions that directly contradict his view, but as he has gone to Ephesus expressly to look for further portions of this frieze, he probably will, on his return, clear up this point.

Meanwhile, in so far as the evidence at present available goes, it seems sufficient to prove that a certain number of the columnæ cælatæ were raised on pedestals somewhat in the manner I have represented It was a very common mode of raising columns in the Roman times, as shown in the woodcut, and is so effective and artistic a mode of treating them, in certain positions, that it is most improbable that it was invented by them, but we cannot trace it back to the time of Alexander the Great, when the Ephesian temple was built. The question must therefore be discussed on its own merits; though if sculpture was carried-up higher on some than on others, it seems nearly certain that it was not by superimposing a number of drums on one another, but by some more artistic arrangement. The simple fact mentioned by Pliny that one was carved by Scopas is sufficient to indicate that it was not a mere circular base like those in the British Museum that he was employed upon. They are, from their form, incapable of real artistic treatment; a square base might be made worthy of his genius.


BASE OF COLUMN AT KENAWAT.
(First Century A.D.)

If any of the pillars were more decorative than the others—it is easy to see which they were. The three central pillars in the second row of the posticum were probably so treated, and probably the three in front of them, six in all. In the pronaos, the ten that flanked the central avenue leading to the great door would almost certainly be so treated, and the two in front, opposite the ends of the antæ, making twelve altogether, as shown on the plan I have drawn. The example at Didyme might lead to the assumption that all the eight in front were so treated, making sixteen in front, which were raised on square bases; but till some further information is obtained, which is not likely now, this must be a matter of opinion only.

During his excavations, Mr. Wood ascertained with absolute certainty that the pillars of the peristyle of the third temple—that described by Pliny—were raised on a stylobate 9 feet 5½ inches above the level of the pavement of the courtyard. This was a unique feature not known to exist in any other Greek temple, but most important to enable anyone to understand the descriptions of the Ephesian temple that have come down to us. Although he did not in any place find one step resting on another, he was able to ascertain from the height of the first step, as well as other circumstances, that the risers were on an average 8 inches, and the treads 18 or 19 inches each. This involved an ascent of fourteen steps, and he so represented it in a pyramid of plain steps without any variation or ornament. So far from this being an ornamental feature, it would have gone far to destroy the effect of the temple by hiding the bases of the pillars from those in the courtyard, and otherwise destroying the connection of the peristyle with its base. But even if it certainly was not a plain pyramid of steps as Mr. Wood proposed, it is equally certain that it was not a plain solid podium which, even though ornamented with sculpture, would have been an architectural solecism that would have been intolerable. It evidently was a combination of both modes of treatment, and though there are no remains to enable us to determine its arrangement with certainty, there are indications that may enable us to ascertain its main features with very tolerable approximate certainty.

My own impression is that on the flanks the podium was divided into four solid blocks the end ones measuring about 60 feet each, the middle ones 80 feet; these were separated by three flights of steps, the central one of 60 feet, the two others of about 45 feet each, as shown on the plan I have drawn. It would of course be mere pedantry to fix these proportions with anything like certainty. There are no data to enable us to do this, and it must consequently be left to the taste and judgment of the restorer to determine what he thinks best. In height there is fortunately the means to determine the proportions with certainty. There were altogether fourteen steps, with an average height of eight inches; three of these, as has been already explained, belonged to the original temple, and were extended in the third to a width of 425 feet in order to form a basement for the "universum templum." Beyond this, as we learn from Philo, "there was formed a basement of ten steps."* This is almost the only fact we get out of the fragment of this too rhetorical description, but as he certainly had seen the temple he was describing, there seems no reason to doubt the fact. The remaining step is indispensable to mark the front of the peristyle; usually there are three steps in Greek temples, but it seems quite impossible that the pillars should be placed on a flat platform without being bounded by at least one. The distance between this step, or the bases of the columns, and the top of the steps, Mr. Wood ascertained to be 15 feet 3 inches,† which is the exact measurement that results from the disposition of the steps shown in the section in the first woodcut herewith [page 13, *ante*].

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* De septem miraculis mundi.

† This dimension was furnished by Mr. Wood, as explained in a footnote, p. 88, of my previous Paper.—J. F.

In front the steps, I conceive, extended the whole width of the pronaos and of the inner alley of the peristyle; but even here I fancy it must have been expedient to divide them into three divisions by piers, so as to avoid monotony. In the rear, the arrangement was peculiar. When the arrangement was dipteral there, there seems to have existed a flight of steps extending, like those in the front, beyond the width of the cella. When the third row of columns was added, they were built on or over this *perron*, as evidenced by Mr. Wood's discovery of a fragment 6 feet in length of the original front step, but the steps were not removed, but allowed to remain, at all events between the pillars, in the position they originally occupied in Deinocrates's temple. Whether they were allowed to remain in the centre is not clear: I think not. All that was wanted here was access to the two doors, which almost certainly led to the opisthodomus and access to the peristyle. The four represented in the plan meet these requirements perfectly, and a solid centre would admit of sculptured adornment, without which this front would have been singularly deficient.

It does not seem to admit of any doubt—especially since the discovery of the sculptures of the Pergamos altar—that the faces of all these blocks were adorned by *bassi relievi* of the same character as those which adorned the columnæ cælatæ. The panels in which they would be placed work-out to exactly the same height (5 feet 6 inches), which is the height of the sculptures on the columnæ cælatæ, and that also of the frieze of the order, while the situation seems singularly well adapted to such a mode of adornment. Whether the figure sculpture was carried up the slope of the steps as at Pergamos is more doubtful: my impression is that it was not. In a monument which had only one flight of steps, and those leading to the platform of the altar which was the principal object of the whole arrangement, such an elaboration might be expedient. But where there were eighteen or twenty similar spaces, such treatment, which must always have been difficult, would be apt to become monotonous, and lead to *tours de force*, which would be by no means pleasant. It appears that a floral decoration would in such a situation have been much more pleasing, and might be varied in each position to any extent that might be thought desirable without any danger of monotony.

Two such groups as the Monte Cavallo horses would, architecturally, form fit adornments for the two pedestals that divide the principal stairs, though ritually they would hardly be appropriate to a temple of Diana, but it would in that age have been easy to design others as beautiful in effect and more appropriate to the situation. The four angles of the platform must also have required groups, consisting of several figures, probably combined, with candelabra or trophies of some sort. Besides these there are pedestals which would necessitate their being completed by at least sixty or seventy single statues, either in marble or bronze; and there must also have been altars and vases, and all the thousand-and-one objects of art with which the Greeks knew so well how to ornament their temples.

If any one can realize, in his mind's eye, the splendour of a temple of a pure Greek-Ionic order, adorned with 127 columns of white marble, 60 feet in height, and nearly one-third of which were sculptured to a considerable height above the bases, he will understand why the temple was so much admired by the ancients. If to this he will add that it was raised on a stylobate, on which were carved 700 feet of bas-reliefs, which was further adorned by at least six great groups of sculpture, and sixty or seventy statues either in marble or bronze, besides altars and minor objects innumerable, he will begin to appreciate the raptures into which all fell, who in ancient times wrote about the temple of Diana at Ephesus. The Parthenon may have been more pure, but there was a glory about this temple, unsurpassed by that of any temple in ancient or modern times with which we are acquainted.

If the temple did not possess the 127 columns mentioned by Pliny, and its podium had not been ornamented by sculpture to at least the extent indicated above, none of these conditions would have been fulfilled, and this famous temple must be contented to rank only as the third or fourth in the ancient world.

I have very little to add to what I wrote in 1877 with regard to the disposition of the interior of the temple, and as little to alter in the arrangements then proposed, except of course in so far as the addition of twenty-seven columns to the peristyle necessitates a corresponding extension of the interior. One of the most satisfactory results of the extension is that it affords room for a cella 150 feet in length, which is what Mr. Wood discovered, though as there was not room for it in a temple of 100 columns, he found it necessary to shorten it by between 40 or 50 feet, to suit what he believed to be the available space. This increased extent makes it more imperative than it was before, that it should be lighted on both ends by a hypæthrum, as I proposed when I wrote my Paper in 1877. Since that time I have had occasion to go again over the subject carefully, while writing a description of the temple of Jupiter Olympius in my work on the Parthenon, and have seen no reason to alter the opinion I then expressed. I feel as strongly convinced as ever that the hypæthrum in great temples, as described by Vitruvius, was a large window occupying the whole width of the cella of the temples, and receiving its light from a court-yard 50 or 60 feet in width, which was "sub divo" and "sine tecto." Not only is there no mechanical difficulty in this, but it is, so far as I know, the most artistic mode of lighting a large hall that has yet been invented or used anywhere. Where two such hypæthra, as in this instance, are introduced, one at either end of the cella, it has been objected that a cross light would exist prejudicial to artistic effect. If the statue in the temple were a chryselephantine one, like that of Jupiter Olympius at Athens, this mode of introducing light might be objectionable. The image here, however, was a mere "simulacrum," not dependent for its effect on any mode of lighting. All that was required would be a hall with a sufficiency of light for it, and for all the images and pictures with which it was filled being sufficiently seen without any reference to the direction in which it was introduced. There were abundant means available by which any artistic defect of this sort, if it existed, could be easily remedied. Besides "velia" or blinds there was the "parapetasma," which we learn from Pausanias (Book v, chap. 12), rested on the floor of the temple, and on occasions when required was drawn up to the roof. Generally it is understood that these, which were curtains "of wool embroidered with all the lavish decorations of the Assyrians, "and dyed with the purple and other colours of the Phœnicians," were suspended in front of the statue of the god, to increase the effect by adding to the mystery with which it was regarded. To me it seems as likely that they were hung behind the image, to increase the effect by affording it a rich and appropriate background. Although I think this the more probable view of the case, it is a question that can hardly be profitably argued in this place, for we have so little experience to guide our judgment. The example that I know which most resembles the cella at Ephesus is the so-called Egyptian Hall at the Mansion House, but it is only 69 feet wide instead of 70 feet, and 90 feet in length as compared with 150 feet. Even making every allowance for climate and other circumstances one window, even if somewhat larger than those found there, would not suffice. The two do not afford a cross light that is at all unpleasing, and any defect in this respect might easily be remedied if thought necessary by the means suggested.

This mode of introducing light necessitates the employment of a circular form of roof; in this instance certainly of wood, which might be made ornamental to any extent, and its effect was probably heightened by gilding, though hardly by colour. The cedar, of which according to Pliny * it was formed, would be more pleasing if left to its natural expression. The central avenue of the pronaos was certainly covered with a semicircular vault, either in wood or in stone. Its span, 23 feet in the clear, was too great for any horizontal treatment. If it was in wood, which it most probably was, the aisles or avenues next to the centre on either hand were also roofed with wood, but in this instance treated horizontally; and it is also probable that the lacunaria throughout the temple were also in wood; at least if this was not so, it is difficult to understand how such a temple could ever have been burnt. The testimony of Vitruvius may be taken as nearly conclusive on this subject,† even though, on the other hand, it is difficult to believe that so magnificent a temple should not have had marble lacunaria in the peristyles at least. The wide spacing of the columns in the pronaos renders it, however, almost certain that that part of the roof was in wood, and it therefore becomes probable that this mode of construction was carried throughout.

In the centre of this space of 150 feet Mr. Wood found the foundation of the altar,‡ about 20 feet square, which, as Strabo tells us, was "rich with the works of Praxiteles."‖ There was of course nothing left to tell its form, and nothing but a drain to carry off the water used in cleansing it. It being placed exactly in the centre of the extended cella is of course another argument for the adoption of the enlarged form, but it also happens — and the coincidence can be hardly accidental—that it is exactly in the middle of the colonnade of 127 columns, equidistant from the outer ranges at the east and west ends.

There was nothing found to indicate where the statue of the goddess stood, it probably was 20 feet or 25 feet behind the altar, 100 feet from the western window. The gallery, which almost certainly extended across the temple, which we may assume was 20 feet in breadth and 40 feet in height, would with the balustrade in front of it be nearly sufficient protection from the effect of the cross light for artistic purposes. If instead of a balustrade 4 feet or 5 feet in height we substituted an opaque screen or painting 20 feet in height, this would do it effectually. Up to the capitals of the pillars in the upper side galleries, this should entirely exclude the light of the lower part of the east window from the eyes of a person standing on the floor of the temple opposite the statue, and would practically get rid of the cross light without materially interfering with the diffused light of this window for the purposes of illuminating the cella. It would also prevent those in the west gallery looking at the back of the statue (which would be undignified), and my impression is that this was the mode adopted.

When first it occurred to me that the temple must be extended from 100 columns to 127, I rejoiced that this enabled me to provide for an opisthodomus nearly in the proportion to the

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* Lib. XVI. 40.

† Vitruvius, lib. II. ch. 9. Ephesi in aede simulacrum etiam lucunaria ex ea (cedrus).

‡ *Discoveries*, p. 258.

‖ Strabo, lib. XIV. p. 641.

cella, as that which had existed in the Parthenon at Athens. On reflection, however, it appeared that it was more important to provide for a second hypæthrum, and if that is conceded, the opisthodomus must be cut up as represented in the plan. Even then, however, there seems sufficient accommodation for all the purposes to which we know this class of apartment was applied. There is an entrance hall, 70 feet by 25 feet, in which offerings could be exhibited, which seems ample for the purpose, and 15 feet or 16 feet by 30 feet or 32 feet, is sufficient room for a staircase to lead to the upper galleries, which were an important feature in this temple. There were also two apartments in the pronaos which may have been used for the same purposes, and there are also the upper of the apartments in the opisthodomus. This, however, is a matter which everyone must decide for himself. There is nothing on the ground which gives the smallest indication of how these parts were arranged, and there is nothing in any writing of any ancient author that would guide us in settling the point. My own impression is entirely in favour of the two hypæthra, both for internal convenience and external effect in so long a temple, but if others do not feel this, I have nothing to urge in contradiction to their views. The lower part of the hypæthrum I presume was roofed over and lighted by a dwarf clerestory on its roof, like that I have proposed for the temple of Jupiter Olympius* at Athens, and drained into the angles either through pipes placed there or by open spouts. The quantity of rain that fell on these is so small that it could be easily managed, as practically their area was a courtyard that was quite separate from any part of the temple itself. If it is thought more consistent with ancient practice that this should drain into an impluvium in the centre, that is easily managed; but it appears to me a singularly undignified mode of arranging a central point in so magnificent a temple.

I have now run through all the points that occur to me as bearing on the disposition of this temple. In doing so, I have adopted all Mr. Wood's discoveries without disputing or omitting a single one: all I have done has been to supplement them from the descriptions by Pliny and others who knew the temple when it was standing in all its glory, while he only found fragments of it in the last state of ruin and decay. It ought to be a source of infinite gratification to learn that every discovery he made bears out and confirms, when properly interpreted, every word the ancient authors have written with regard to it, for hitherto, looking only at the results obtained by the spade and neglecting those due to the pen, the riddle has been insoluble. By combining both methods of research they have been easily reconciled, and have yielded an answer which enables the temple of Diana at Ephesus again to take rank as the greatest and richest of the ancient world, and as such to be ranked as one of the seven wonders which were considered preëminent for greatness and beauty among the works executed by human hands.†

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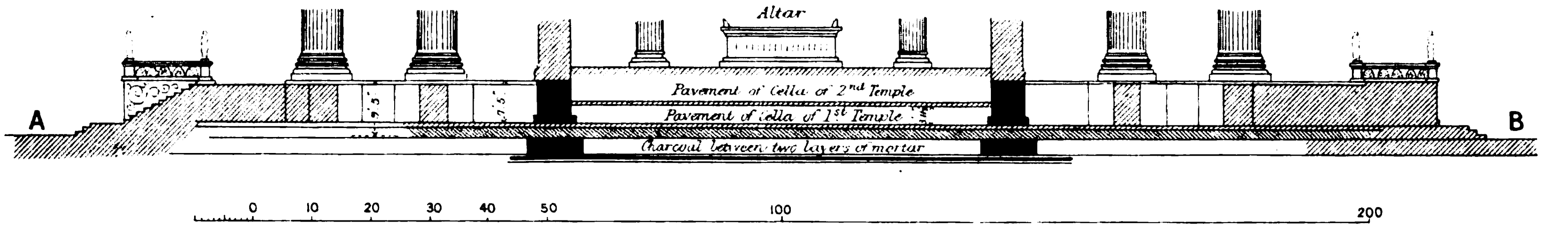
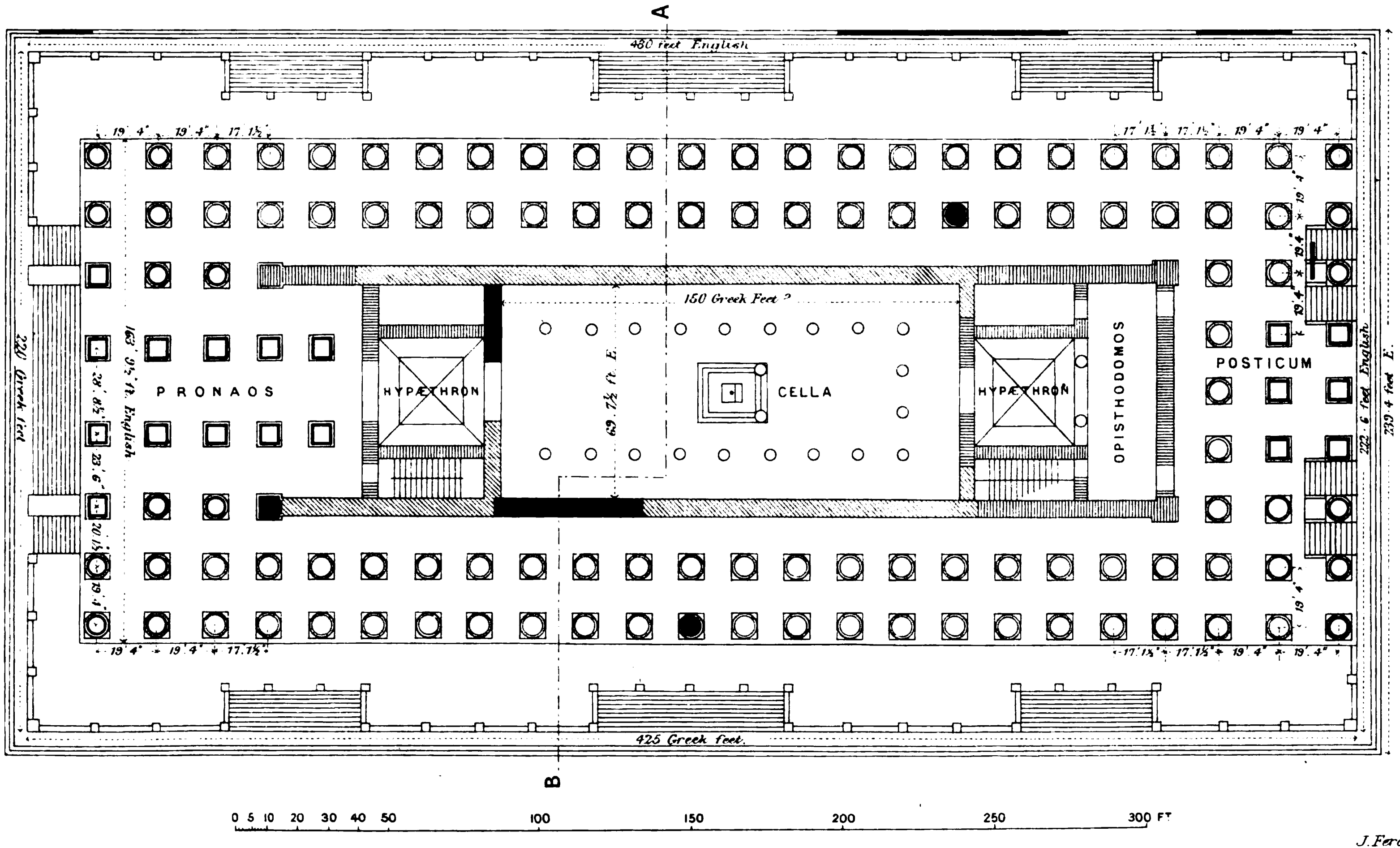
* See *The Parthenon*, &c., page 17. Also the TRANSACTIONS, 1861-62, pp. 17-36.

† In my plan of the temple at Ephesus I have adopted the same mode of graduated shading as that used by Mr. Wood in his book. The parts which he actually found *in situ* are shaded black. The parts whose position he ascertained with certainty, though he did not actually find them, are represented with diagonal hatching. The parts which are conjectural in his plans, and in mine, are represented by hatching perpendicular to the outline.—J. F.


Altar
Pavement of Cella of 2nd Temple
Pavement of Cella of 1st Temple
Charcoal between two layers of mortar
A
B
9' 5"
7' 5"
0
10
20
30
40
50
100
200

Section through A.B.



J. Fergusson, Del.

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PLAN OF THE TEMPLE OF DIANA AT EPHESUS.